

AMENDMENTS TO THE CLAIMS

Please cancel Claims 1, 57, 60, 65, 66, 86 and 96-102 without prejudice.

Please amend Claims 7, 22 and 67 as follows:

1. **(Canceled)**
2. **(Previously amended)** A load lock as set forth in Claim 7, wherein said load lock is formed at least in part by a first housing portion and an auxiliary housing portion that is removably coupled to said first housing portion.
3. **(Previously amended)** A load lock as set forth in Claim 7, wherein said wafer carrier is adapted for receiving only a pair of wafers.
4. **(Previously amended)** A load lock as set forth in Claim 7, wherein said wafer carrier includes at least an unload position and a load position.
5. **(Previously amended)** A load lock as set forth in Claim 7, wherein said wafer carrier is located on top of said elevator plate.
6. **(Original)** A load lock as set forth in Claim 5, wherein said elevator plate is configured to move vertically in said load lock.
7. **(Currently amended)** A load lock that defines at least partially a first chamber and an auxiliary chamber, said load lock comprising:
 - a first port and a second port, said first and second ports for moving a wafer into and out of said load lock;
 - an elevator plate including a wafer carrier that is adapted for receiving a plurality of wafers, wherein said wafer carrier is attached to said elevator plate; and
 - said wafer carrier being moveable between a first position where said wafer carrier is in said first chamber and a second position where said wafer carrier is in said auxiliary chamber and said elevator plate substantially seals said auxiliary chamber from said first chamber, wherein said first and second ports open into said first chamber when said elevator plate is in said second position.
8. **(Original)** A load lock port as set forth in Claim 7, wherein said load lock comprises a first housing portion and an auxiliary housing portion that at least partially defines the auxiliary chamber, said first and second ports being located on said first housing portion

9. **(Previously amended)** A load lock that defines at least partially a first chamber and an auxiliary chamber, said load lock comprising:

a first port and a second port, said first and second ports for moving a wafer into and out of said load lock;

an elevator plate including a wafer carrier that is adapted for receiving a plurality of wafers and is attached to said elevator plate; and

said wafer carrier and said elevator plate being moveable between a first position where said wafer carrier is in said first chamber and a second position where said wafer carrier is in said auxiliary chamber and said elevator plate substantially seals said auxiliary chamber from said first chamber, wherein said first port opens into said first chamber and said second port opens into said auxiliary chamber.

10. **(Original)** A load lock as set forth in Claim 9, wherein said first port communicates with a wafer handling module.

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11. **(Previously amended)** A load lock as set forth in Claim 10, wherein said load lock comprises a first housing portion and an auxiliary housing portion, said first port being located on said first housing portion and said second port being located on said auxiliary housing portion.

12. **(Original)** A load lock as set forth in Claim 9, wherein said second port communicates with a wafer handling module.

13. **(Original)** A load lock as set forth in Claim 12, wherein said load lock comprises a first housing portion and an auxiliary housing portion, said first port being located on said first housing portion and said second port being located on said auxiliary housing portion.

14. **(Previously amended)** A load lock that defines at least partially a first chamber and an auxiliary chamber, said load lock comprising:

a first port and a second port, said first and second ports for moving a wafer into and out of said load lock;

an elevator plate including a wafer carrier that is adapted for receiving a plurality of wafers and is attached to said elevator plate; and

said wafer carrier and said elevator plate being moveable between a first position where said wafer carrier is in said first chamber and a second position where said wafer carrier is in said auxiliary chamber and said elevator plate substantially seals said auxiliary chamber from said first chamber, wherein said first port is configured to receive said wafer carrier and said wafer carrier and said elevator plate being moveable between an outside position where said wafer carrier is outside said load lock and an inside position wherein said wafer carrier is inside said load lock.

15-17. (Canceled)

18. (Previously amended) A load lock as set forth in Claim 7, wherein said auxiliary chamber includes inner walls that are adapted to withstand an auxiliary fluid.

19. (Previously amended) A load lock as set forth in Claim 7, wherein said auxiliary chamber includes inner walls that are adapted to withstand an auxiliary fluid and wherein said auxiliary fluid comprises HF vapor.

20. (Previously amended) A load lock as set forth in Claim 7, wherein said load lock further includes heating elements.

21. (Original) A load lock as set forth in Claim 20, wherein said heating elements are located within said auxiliary chamber.

22. (Currently amended) A load lock that defines at least partially a first chamber and an auxiliary chamber, said load lock comprising:

a first port and a second port, said first and second ports for moving a wafer into and out of said load lock;

an elevator plate including a wafer carrier that is adapted for receiving a plurality of wafers and is attached to said elevator plate; and

said wafer carrier being moveable between a first position where said wafer carrier is in said first chamber and a second position where said wafer carrier is in said auxiliary chamber and said elevator plate substantially seals said auxiliary chamber from said first chamber, wherein said load lock further includes heating elements and wherein said heating elements are located upon the elevator plate.

23-56 (Previously withdrawn)

57-60.

61. **(Previously amended)** A system for processing substrates, comprising

a load lock chamber including a lower portion having a first inner width and an upper portion having a narrower second inner width, the chamber including a first port and a second port, each of the ports sized to pass substrates therethrough, the load lock chamber further comprising a moveable platform configured to support at least one substrate thereon and sized to have a width less than the first inner width and greater than the second inner width to enable selectively sealing the upper portion with the at least one substrate supported thereon;

a substrate handling chamber selectively communicating with the load lock chamber through the first port; and

at least one process chamber selectively communicating with the substrate handling chamber, wherein the first port is located in the upper portion.

62-66. **(Canceled)**

67. **(Currently amended)** A system for processing substrates, comprising

a load lock chamber including a lower portion having a first inner width and an upper portion attached to the lower portion and having a narrower second inner width, the chamber including a first port and a second port, each of the ports sized to pass substrates therethrough, the load lock chamber further comprising a moveable platform configured to support at least one substrate thereon and sized to have a width less than the first inner width and greater than the second inner width to enable selectively sealing the upper portion with the at least one substrate supported thereon;

an auxiliary processing system selectively communicating with an opening in the upper ~~chamber~~ portion;

a substrate handling chamber selectively communicating with the load lock chamber through the first port; and

at least one process chamber selectively communicating with the substrate handling chamber, wherein said first port opens into said upper ~~chamber~~ portion and said second port opens into said lower ~~chamber~~ portion.

68. (Previously added) A load lock as set forth in Claim 9, wherein said load lock is formed at least in part by a first housing portion and an auxiliary housing portion that is removably coupled to said first housing portion.

69. (Previously added) A load lock as set forth in Claim 9, wherein said wafer carrier is adapted for receiving only a pair of wafers.

70. (Previously added) A load lock as set forth in Claim 9, wherein said wafer carrier includes at least an unload position and a load position.

71. (Previously added) A load lock as set forth in Claim 9, wherein said wafer carrier is located on top of said elevator plate.

72. (Previously added) A load lock as set forth in Claim 71, wherein said elevator plate is configured to move vertically in said load lock.

73. (Previously added) A load lock as set forth in Claim 9, wherein said auxiliary chamber includes inner walls that are adapted to withstand an auxiliary fluid.

74. (Previously added) A load lock as set forth in Claim 73, wherein said auxiliary fluid is HF vapor.

75. (Previously added) A load lock as set forth in Claim 9, wherein said load lock further includes heating elements.

76. (Previously added) A load lock as set forth in Claim 75, wherein said heating elements are located within said auxiliary chamber.

77. (Previously added) A load lock as set forth in Claim 14, wherein said load lock is formed at least in part by a first housing portion and an auxiliary housing portion that is removably coupled to said first housing portion.

78. (Previously added) A load lock as set forth in Claim 14, wherein said wafer carrier is adapted for receiving only a pair of wafers.

79. (Previously added) A load lock as set forth in Claim 14, wherein said wafer carrier includes at least an unload position and a load position.

80. (Previously added) A load lock as set forth in Claim 14, wherein said wafer carrier is located on top of said elevator plate.

81. (Previously added) A load lock as set forth in Claim 80, wherein said elevator plate is configured to move vertically in said load lock.

82. (Previously added) A load lock as set forth in Claim 14, wherein said auxiliary chamber includes inner walls that are adapted to withstand an auxiliary fluid.

83. (Previously added) A load lock as set forth in Claim 82, wherein said auxiliary fluid is HF vapor.

84. (Previously added) A load lock as set forth in Claim 14, wherein said load lock further includes heating elements.

85. (Previously added) A load lock as set forth in Claim 84, wherein said heating elements are located within said auxiliary chamber.

86. (Canceled)

87. (Previously added) A load lock as set forth in Claim 22, wherein said load lock is formed at least in part by a first housing portion and an auxiliary housing portion that is removably coupled to said first housing portion.

88. (Previously added) A load lock as set forth in Claim 22, wherein said wafer carrier is adapted for receiving only a pair of wafers.

89. (Previously added) A load lock as set forth in Claim 22, wherein said wafer carrier includes at least an unload position and a load position.

90. (Previously added) A load lock as set forth in Claim 22, wherein said wafer carrier is located on top of said elevator plate.

91. (Previously added) A load lock as set forth in Claim 90, wherein said elevator plate is configured to move vertically in said load lock.

92. (Previously added) A load lock as set forth in Claim 22, wherein said auxiliary chamber includes inner walls that are adapted to withstand an auxiliary fluid.

93. (Previously added) A load lock as set forth in Claim 92, wherein said auxiliary fluid is HF vapor.

94. (Previously added) A load lock as set forth in Claim 22, wherein said load lock further includes heating elements.

95. **(Previously added)** A load lock as set forth in Claim 94, wherein said heating elements are located within said auxiliary chamber.

96-102. **(Canceled)**

103. **(Previously added)** The system of Claim 61, further comprising a substrate carrier that is attached to said moveable platform.

104. **(Previously added)** The system of Claim 61, further comprising a substrate carrier on said moveable platform, the substrate carrier being adapted to receive at least a pair of substrates

105. **(Previously added)** The system of Claim 104, wherein said substrate carrier is located on top of said moveable platform and said moveable platform is configured to move vertically in said load lock chamber.

106. **(Previously added)** The system of Claim 61, wherein the upper portion includes treatment gas injectors that communicate with a source of HF vapor.

107. **(Previously added)** The system of Claim 61, wherein the upper portion includes treatment gas injectors that communicate with an oxidant source.

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108. **(Previously added)** A load lock as set forth in Claim 61, wherein said load lock chamber further includes heating elements.

109. **(Previously added)** A load lock as set forth in Claim 108, wherein said heating elements are located within said upper portion.

110. **(Previously added)** The system of Claim 67, further comprising a substrate carrier that is attached to said moveable platform.

111. **(Previously added)** The system of Claim 67, further comprising a substrate carrier on said moveable platform, the substrate carrier being adapted to receive at least a pair of substrates

112. **(Previously added)** The system of Claim 111, wherein said substrate carrier is located on top of said moveable platform and said moveable platform is configured to move vertically in said load lock chamber.

113. **(Previously added)** The system of Claim 67, wherein the upper portion includes treatment gas injectors that communicate with a source of HF vapor.

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114. **(Previously added)** The system of Claim 67, wherein the upper portion includes treatment gas injectors that communicate with an oxidant source.

115. **(Previously added)** A load lock as set forth in Claim 67, wherein said load lock chamber further includes heating elements.

116. **(Previously added)** A load lock as set forth in Claim 115, wherein said heating elements are located within said upper portion.

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COMMENTS

In response to the Office Action mailed November 22, 2002, Applicants respectfully request the Examiner to reconsider the above-captioned application in view of the above amendments and the following comments.

Drawings

The Examiner has objected to the drawings for failing to include the reference sign "206" and for including the reference sign "406", which is not described in the Specification. However, Applicants respectfully direct the Examiner to the Amendment After Final filed on October 4, 2002 in which amendments were made to the Specification to address this informality. Applicants submit that, in light of these previous amendments, the objections to the drawings are moot and that a proposed drawing correction or amendment to the Specification is not necessary.

Claim Objections

As discussed below, Claim 98 has been canceled and thus the objection to this claim is moot.

Claims 9-14 and 68-85

Claims 9-13, 68, 70-73, 75, 76 stand rejected under 35 U.S.C. 102(e) as being anticipated by Tanaka et al (U.S. Patent No. 6,234,107, herein "Tanaka"). Claims 14, 69, 77-85 stand rejected under 103(a) as being unpatentable over Tanaka in view of Kondo et al. (JP 06-275,703, herein "Kondo"). Claim 74 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Saeki (U.S. Patent No. 5,223,001).

Applicants respectfully traverses the rejection of these claims. With respect to independent Claims 9 and 14, both of these claims recite, in part, a load lock that includes "an elevator plate including a wafer carrier that is adapted for receiving a plurality of wafers and is attached to said elevator plate." Applicants respectfully note that neither Tanaka nor Saeki disclose a load lock with the above-noted feature. For at least this reason, Applicants submit that independent Claims 9 and 14 cannot be anticipated by Tanaka or Saeki.

Moreover, Applicants respectfully submit that the above noted deficiency in Tanaka and Saeki cannot be cured by combining these references with the teachings of Kondo. As shown in Figure 4 and 5, Kondo discloses a load lock unit for use with a wafer cassette 40. Such cassettes are quite large and are configured to support a large number of wafers. Because of their size and

weight, these cassettes do not tend to tip over and thus there is no need or motivation to attach the cassette to the elevator plate. Moreover, attaching a cassette to the elevator plate would eliminate one of the advantages of a cassette, which is that the cassette can be removed, in its entirety, from the load lock as shown in Figure 4 of Kondo. Thus, the combination of Kondo with either Tanaka or Saeki does not disclose or suggest a load lock with the above-noted limitations. For at least this reason, Applicants respectfully submit that Claims 9 and 14 are in condition.

Claims 10-13 and 68-85 depend either directly or indirectly from either allowable Claim 9 or allowable Claim 14. For at least this reason, Applicants submit that Claims 10-13 and 68-85 are in condition for allowance.

Claims 1-7, 18-22 and 86-95

Claims 1-2, 4-8, 18 and 19 stand rejected under 35 U.S.C. 102(b) as being anticipated by Saeki. Claims 3, 20-22 and 86-95 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Saeki in view of Kondo.

Applicant disagrees with the rejection of these claims. Nevertheless, to advance prosecution, Applicants has amended these claims to more particularly and distinctly claim certain aspects of Applicants' inventions. Applicants reserve the right to pursue these claims or claims of similar scope in a continuing application.

As amended, Claim 7 recites, in part, a load locking comprising an elevator plate including a wafer carrier that is adapted for receiving a plurality of wafers, "wherein said wafer carrier is attached to said elevator plate." Claim 22 now recites, in part, a load lock comprising "an elevator plate including a wafer carrier that is adapted for receiving a plurality of wafers and is attached to said elevator plate." For at least the reasons set forth above with respect to Claims 9-14 and 68-85, Applicants respectfully submit that Claims 7 and 22 are in conditions for allowance. Claims 1-6, 18-21 and 87-95 depend, either directly or indirectly, from either Claim 7 or Claim 22. For at least this reason, these dependent claims are also in condition for allowance.

Claims 61, 67, 103-116

Claims 61, 67, 103, 107-110 and 113-116 stand rejected under 35 U.S.C. 102(e) as being anticipated by Tanaka. Claims 104, 105, 111 and 112 stand rejected under 103(a) as being

unpatentable over Tanaka in view of Kondo. Claim 106 stands rejected as being unpatentable over Tanaka in view of Saeki.

Claims 67 recites, in part, a system for processing substrates comprising a load lock chamber having a lower portion, an upper portion, a first port and a second port, "an auxiliary processing system selectively communicating with an opening in the upper ~~chamber~~ portion," "a substrate handling chamber selectively communicating with the load lock chamber through the first port", "at least one process chamber selectively communicating with the substrate handling chamber, wherein said first port opens into said upper ~~chamber~~ portion." (underlining and strikethrough indicating amendments made to correct an informality). Thus the recited invention of Claim 67 recites a port from the upper portion opening to the substrate handling chamber which, in turn, communicates with process chamber(s).

In contrast, Tanaka discloses an auxiliary vacuum chamber 50, with an upper space 52 that is connected through a gate-valve 14 to a wafer transfer chamber 16, which in turn is connected to cassette chambers 20, 21. Col. 6, lines 56-67. A second opening 10' is positioned on the lower part of the chamber 50 and is in communication with the processing units 1, 2, 3. See Col. 1, lines 47-65 and Col. 7, lines 20-34. Thus, the lower part of the chamber communicates with the process chambers, not the upper part as recited herein. Advantageously, in the recited arrangement, wafers can be transferred directly between the substrate handling chamber (and thus to or from the process chamber(s)) and the smaller volume of the upper portion, which can be more easily controlled than the larger lower part.

An anticipation rejection is proper only if a single reference shows every element of the claim, arranged as in the claim. MPEP §2131 As such, Applicants respectfully submit that the rejection of Claim 67 is improper because the processing system of Tanaka is not arranged as claimed in Claim 67. In addition, Kondo or Saeki do not correct the above-noted deficiency in Tanaka.

In a similar manner, Claim 61 recites, in part, a system for processing substrates comprising "a load lock chamber including a lower portion having a first inner width and an upper portion having a narrower second inner width" and "including a first port and a second port", "a substrate handling chamber selectively communicating with the load lock chamber through the first port" and

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"at least one process chamber selectively communicating with the substrate handling chamber, wherein the first port is located in the upper portion."

For at least the reasons set forth above, Applicants respectfully submit that Claims 61 and 67 are in condition for allowance. Claims 103-116 depend, either directly or indirectly on either Claim 61 or 67, and, for at least this reason, these dependent claims are also in condition for allowance

Claims 57, 60, 65, 66, 96-102

Claims 57, 60, 66, 68, 96 and 100-102 stand rejected under 35 U.S.C. 102(e) as being anticipated by Tanaka et al (U.S. Patent No. 6,234,107, herein "Tanaka"). Claims 65, 97 and 98, stand rejected under 103(a) as being unpatentable over Tanaka in view of Kondo. Applicants respectfully disagree with the rejection of these claims. Nevertheless, to advance prosecution, Applicants has canceled these claims. Applicants reserve the right to pursue the rejected claims in their original or similar form in a continuing application.

CONCLUSION

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims and specification. Accordingly, early issuance of a Notice of Allowance is most earnestly solicited.

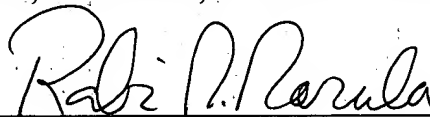
The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicant's attorney in order to resolve such issue promptly.

Respectfully submitted,

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